

**Aumentos dos preços
internacionais e impactos económicos a nível
macro- e micro economico**

Felix Fischer, International Monetary Fund

Channing Arndt, MPD

Harold Alderman, Banco Mundial

Antonio Nucifora, Banco Mundial

Rui Benfica, The World Bank

Maputo - Mozambique

June 18 2008

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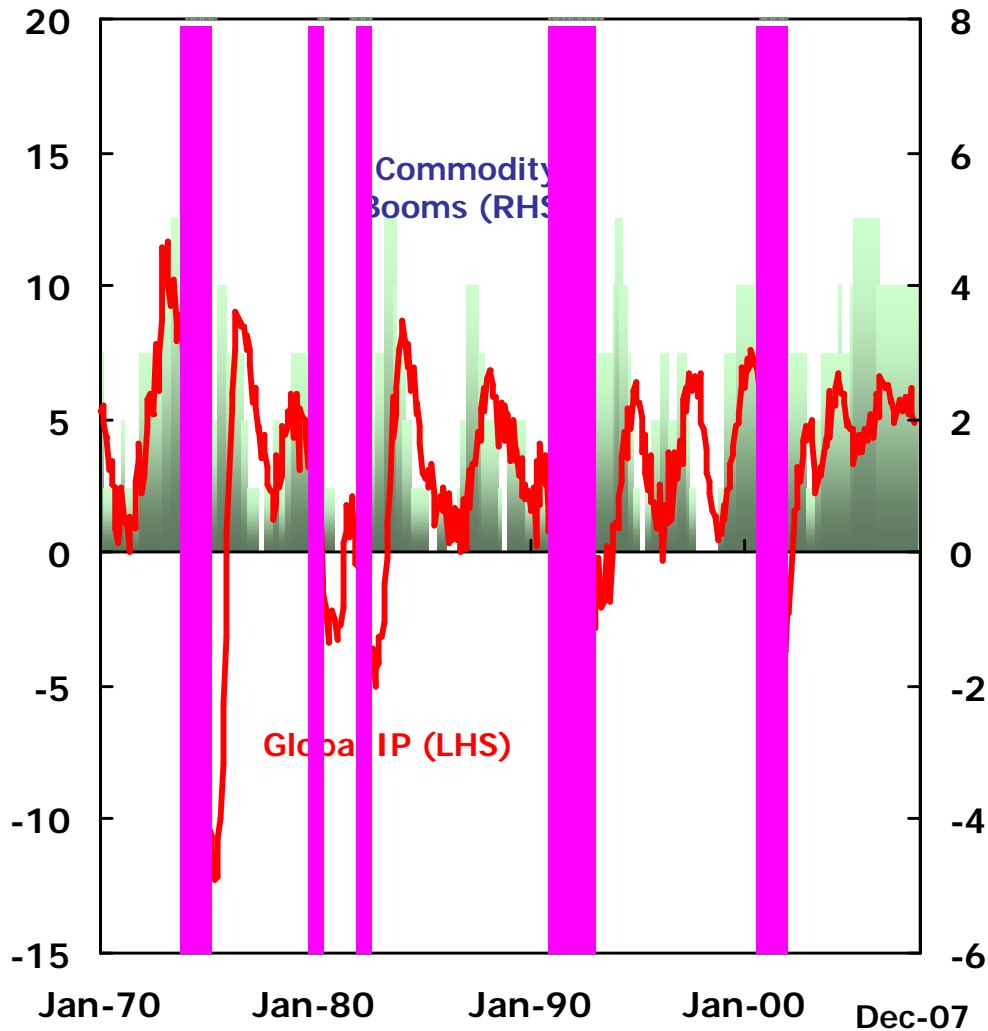
1. Price shocks and general overview
2. Mozambique's macroeconomic response to the global environment
3. Economic Impacts of price increases
 - Consumer Price Indexes
 - Food consumption and expenditure patterns and the effects of price changes on household welfare
 - Impacts of shocks and subsidy policies in a general equilibrium framework

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Commodity Prices Typically Fall in Line With Industrial Activity in Global Downturns

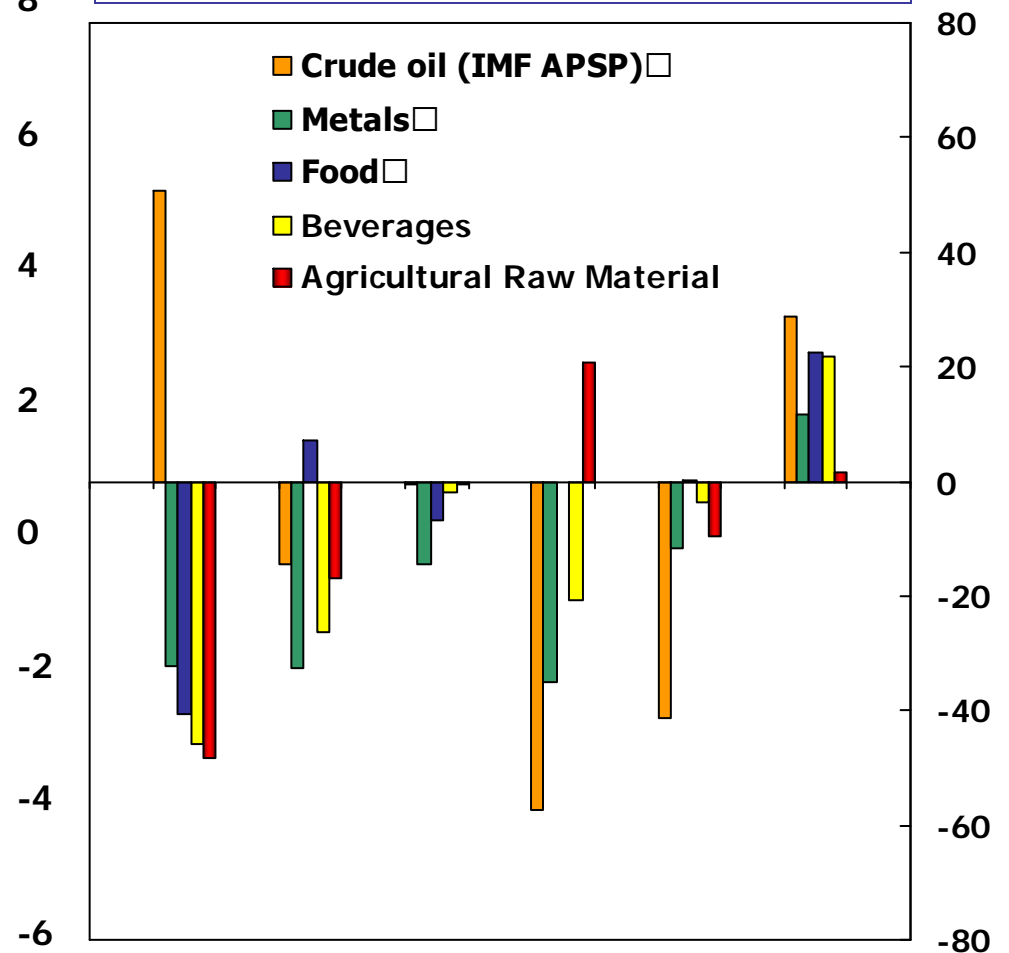
Global Industrial Production and Commodity Price Changes 1/



1/ Shaded area indicate past global downturns; commodity booms measured by number of groups in boom phase.

Commodity Price Changes By Category

(in US dollars; peak-to-trough percent change)

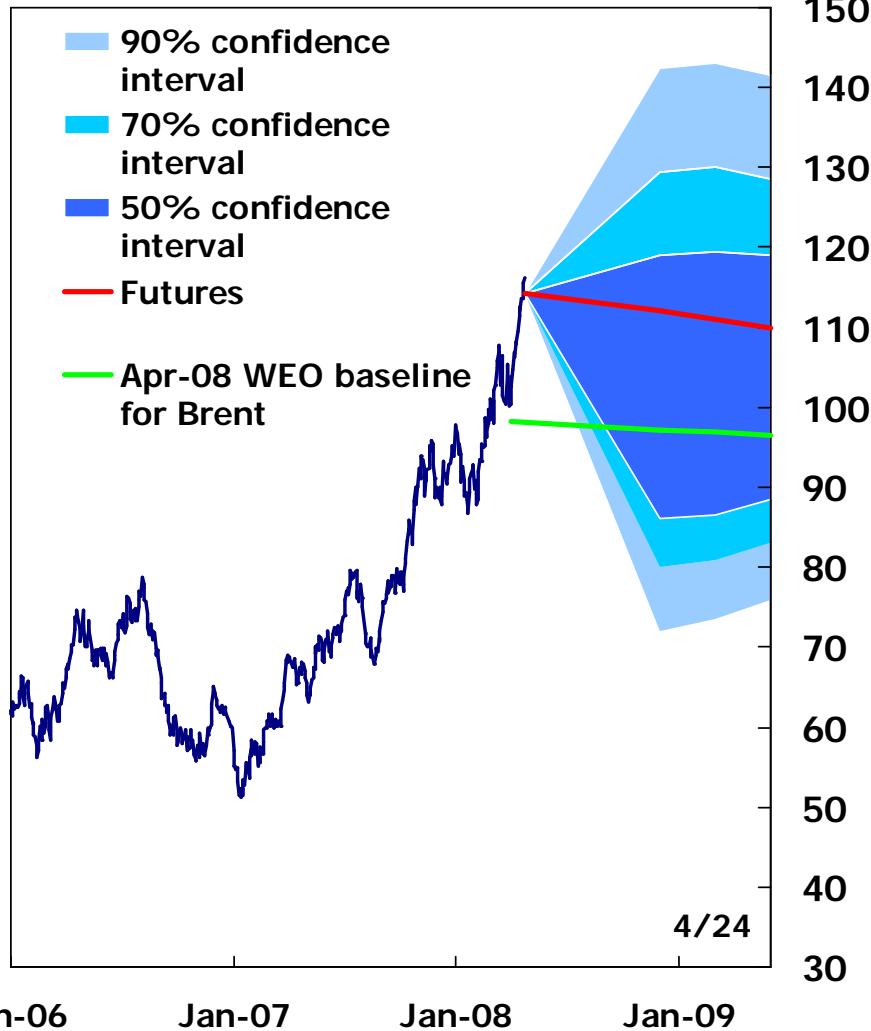


Dec73- Jun75 Feb80- Sep80 Aug81- Sep82 Nov90- Jun93 Sep00- Jan02 Sep07- Current

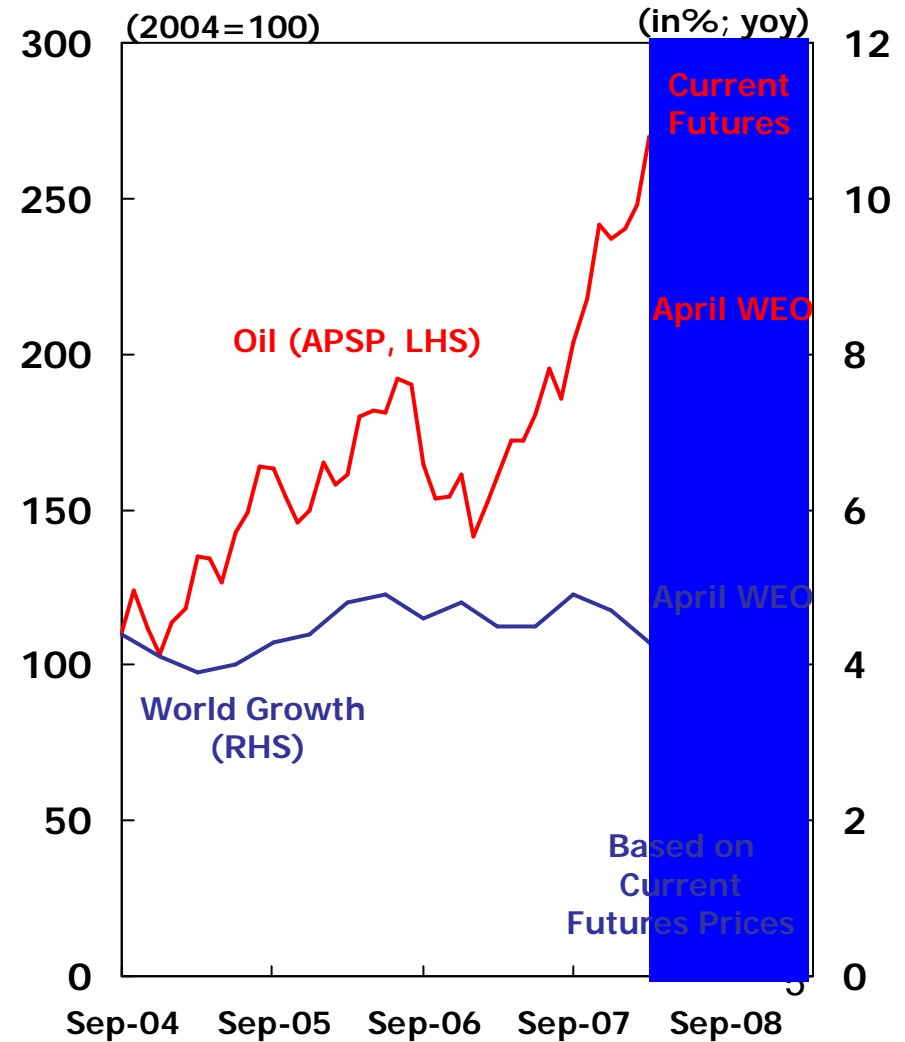
As Oil Prices Have Reached New Highs, Global Growth Could Slow Further

Crude Oil Prices

(Brent futures options;
U.S. dollars per barrel)



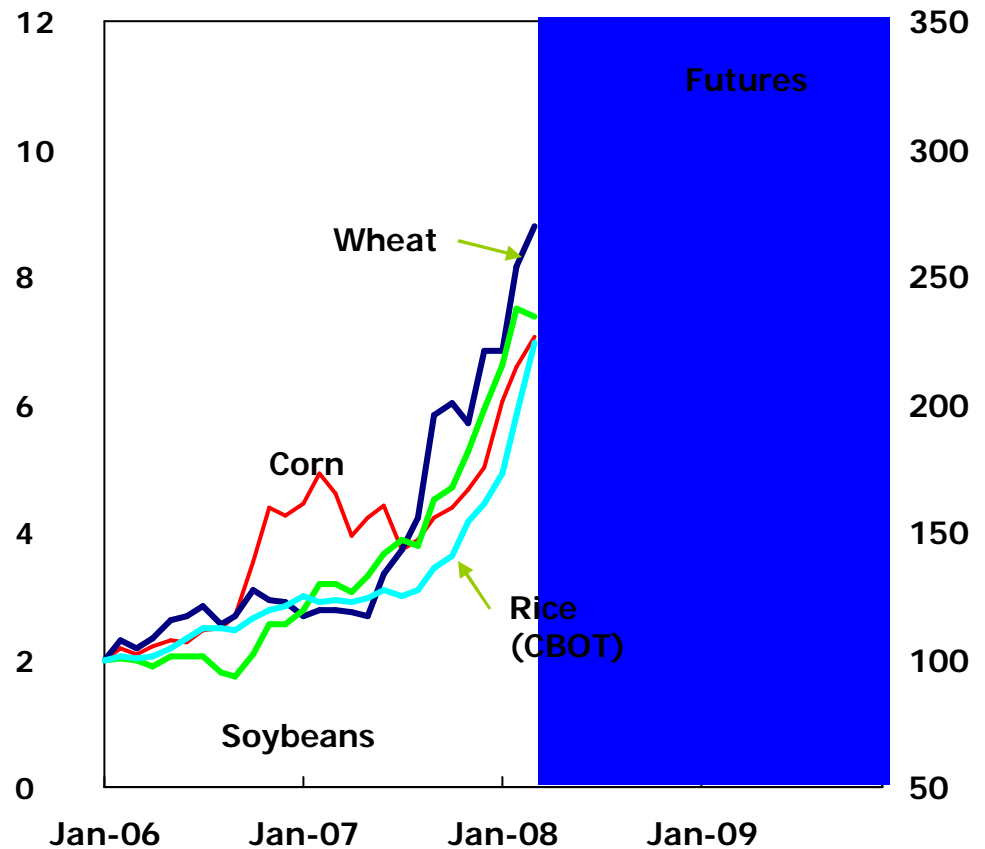
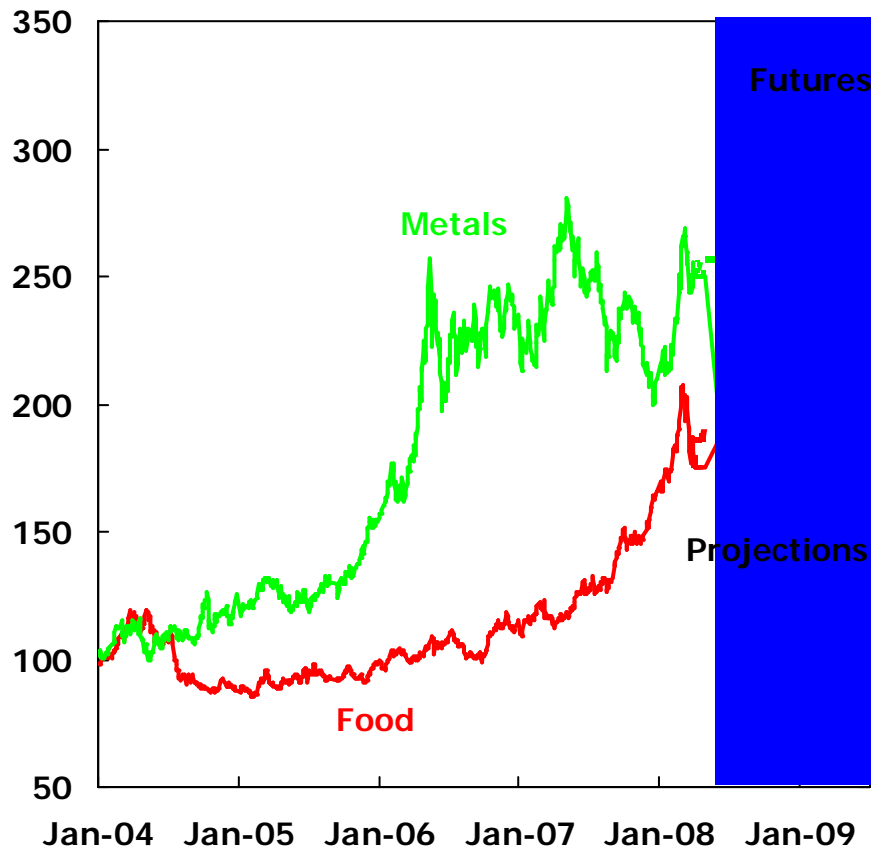
Oil Prices and Global Growth



A Disconnect With Global Growth is Also Visible in Metals and Food Prices, Most Recently in Rice

Commodity Indices 1/
(dotted lines are futures prices)

Selected Grain Prices 2/
(January 2006 = 100)

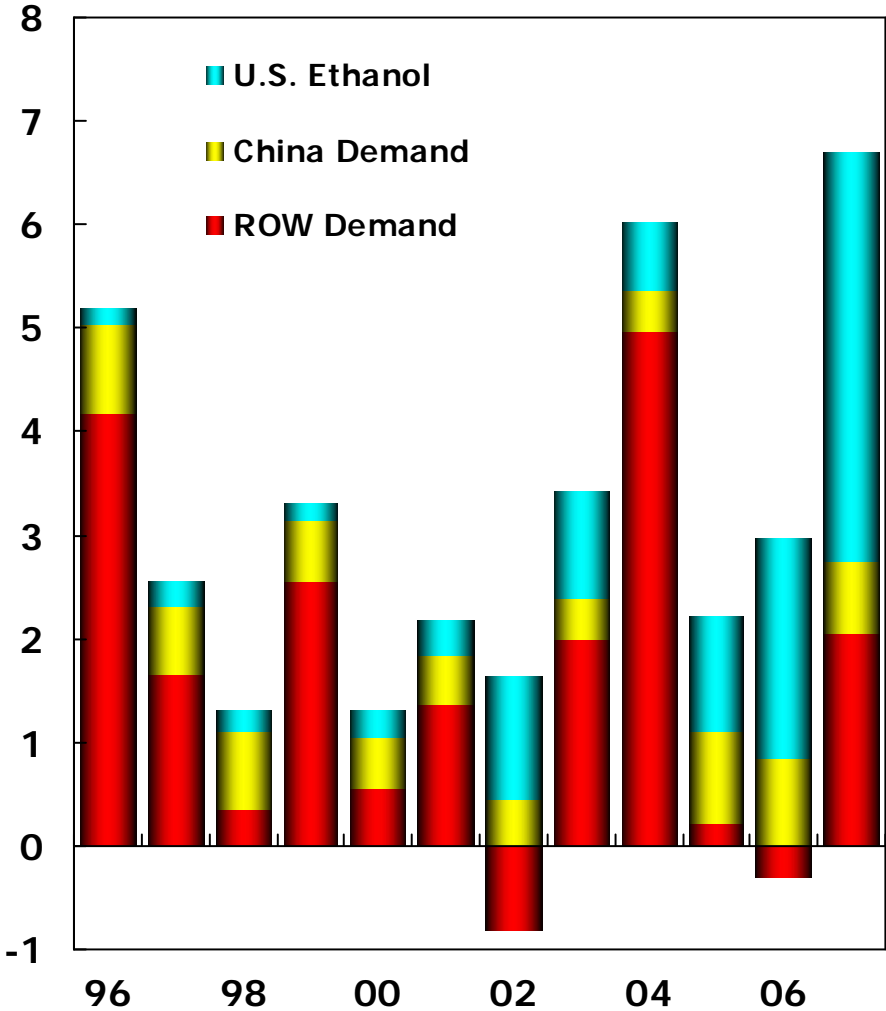


1/ Food index is composed of barley, corn, soybean, soybean meal, soybean oil, pork, palm oil and sugar. Based metals index comprises aluminum, copper, lead, nickel, tin and zinc.

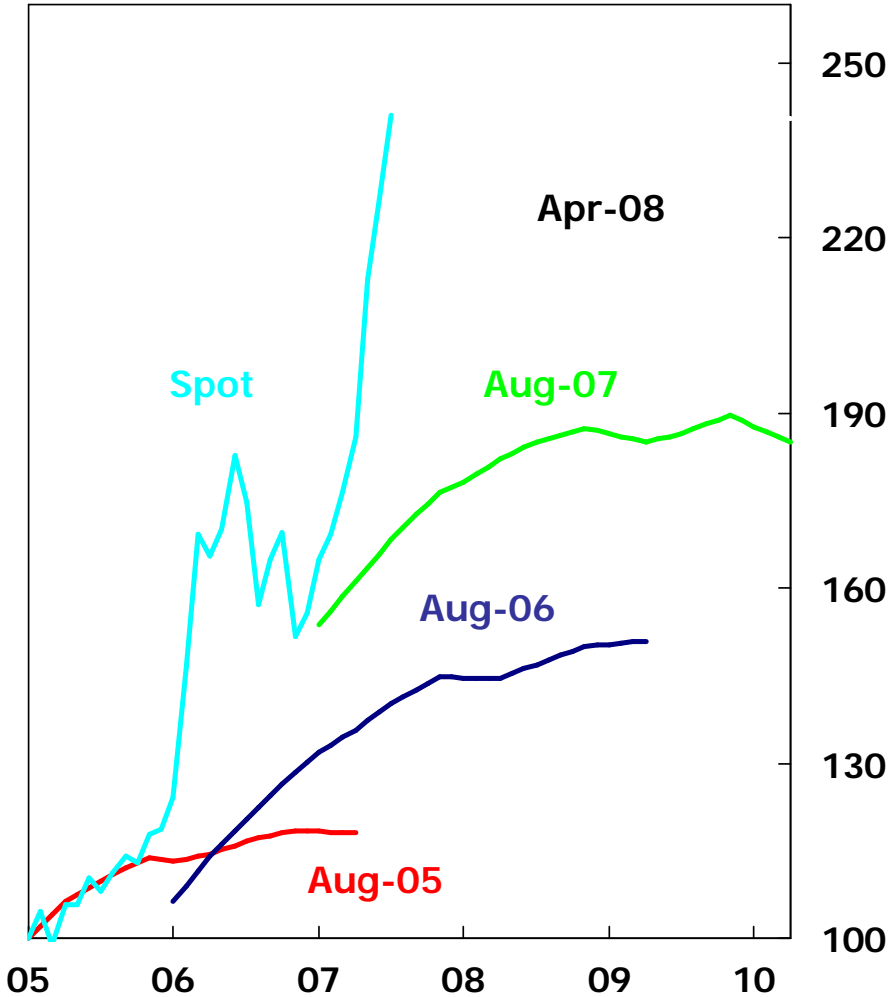
2/ Futures prices are as of 4/24/2008.

Rising Demand from Biofuels Production Has Pushed up Corn Prices

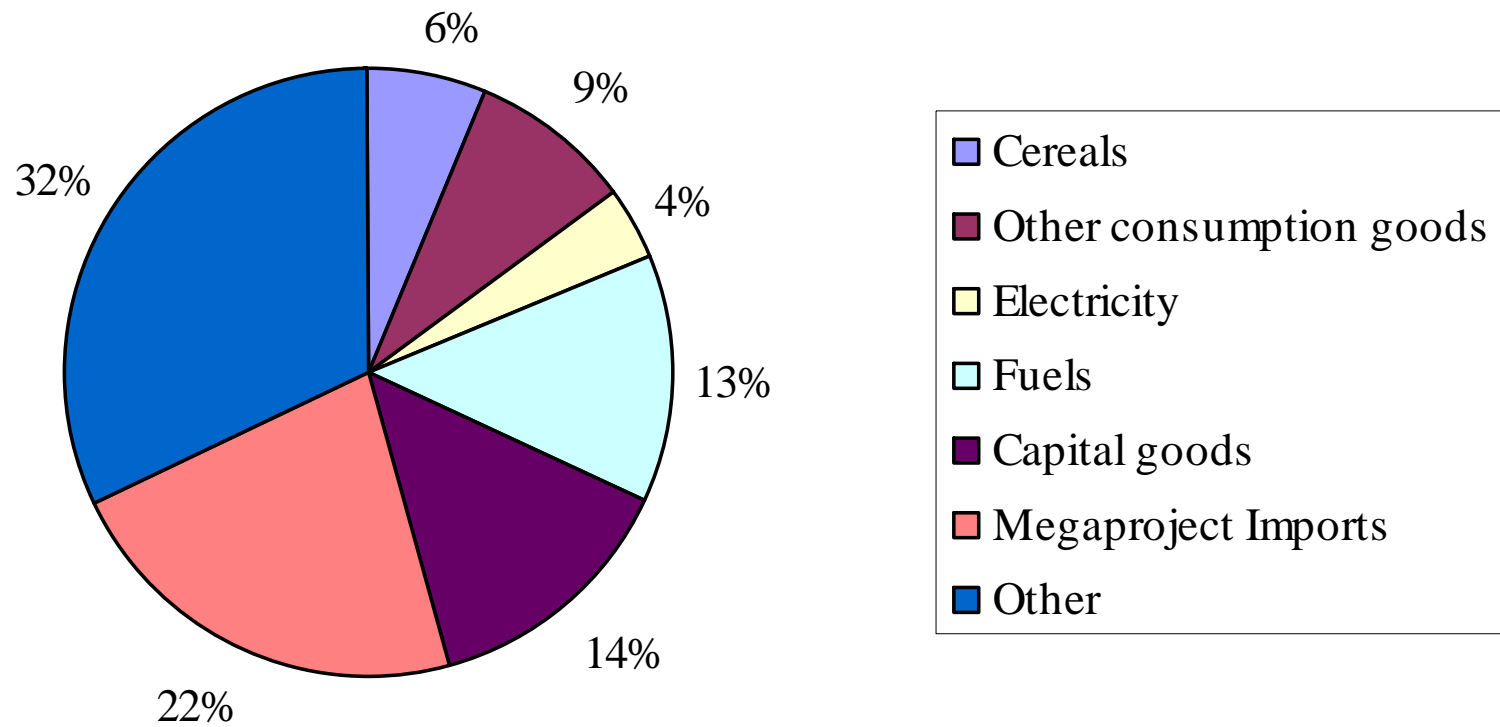
Corn Consumption
(contributions to growth, in percent)



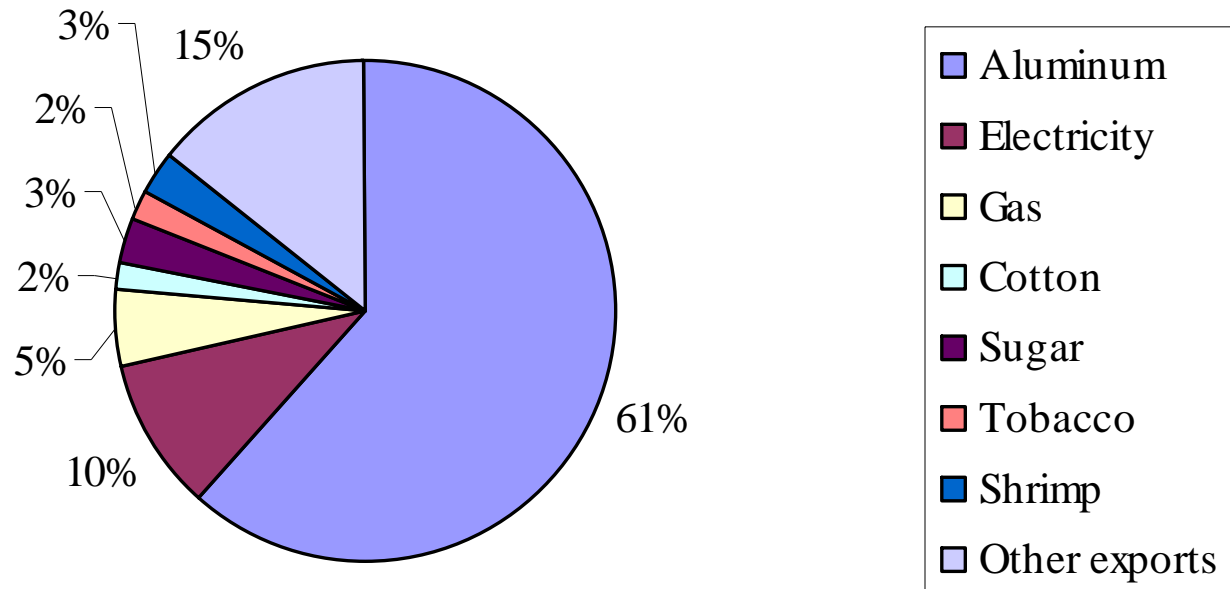
Corn Futures Curves
(index, Sep-05=100)



Imports Share Distribution in 2007



Export Share Distribution in 2007 (fob)



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Comfortable starting point in Mozambique

- Sustained prudent monetary and fiscal policy with visible results
 - Strong sustained real growth
 - Considerable investments
 - Comfortable Net International Reserves
 - Single digit inflation
 - Flexible exchange rate
- The policy mix served well during previous shocks

Main messages

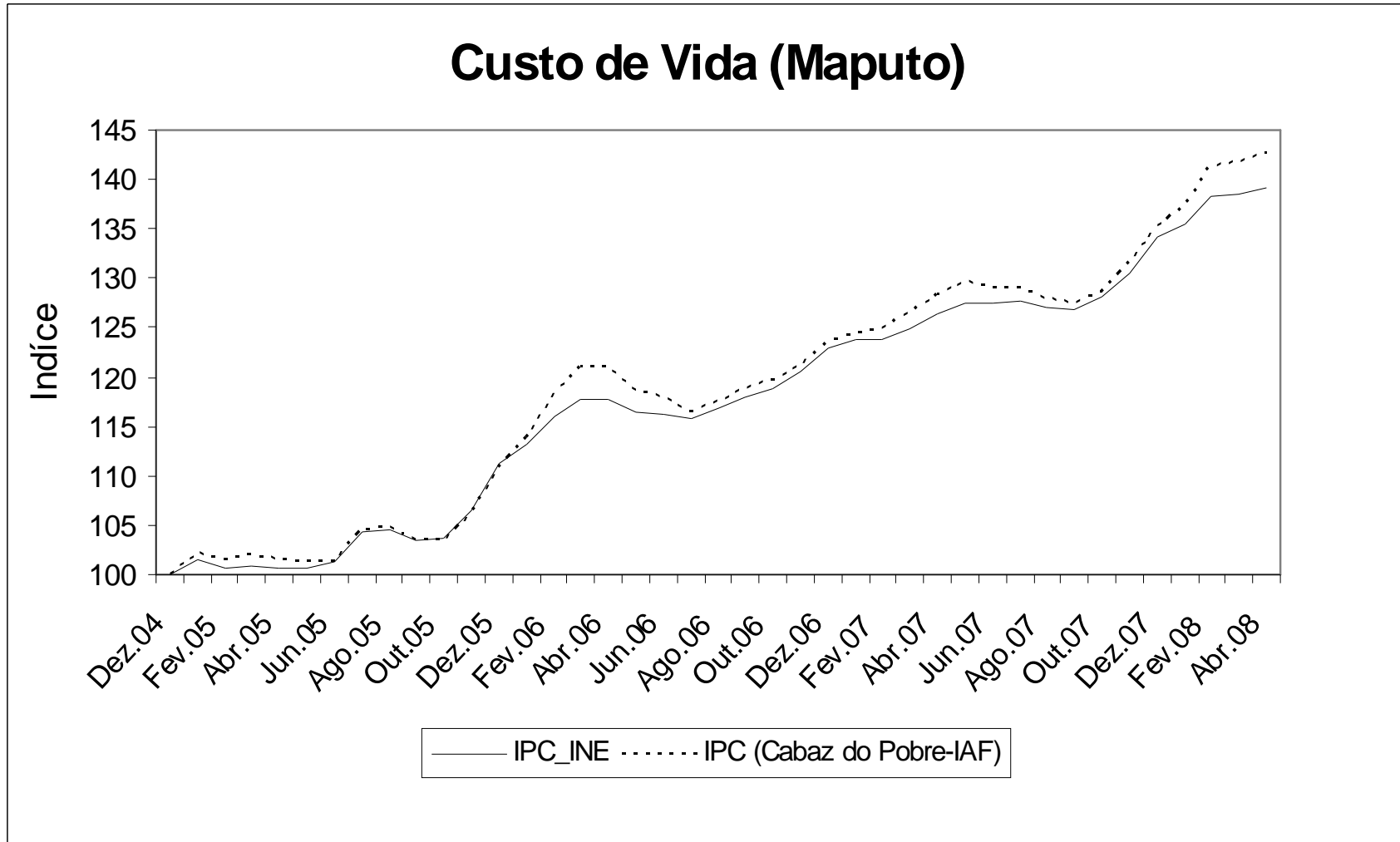
- Increased international prices make us poorer.
- Maintain and further consolidate macroeconomic stability. Mozambique is well equipped.
- Let prices adjust
- Fuel and food subsidies are inefficient
- Alternative package of targeted expenditure needed: (e.g. safety nets, education, health)
- Strong and decisive sectoral policies and an improved business environment are needed

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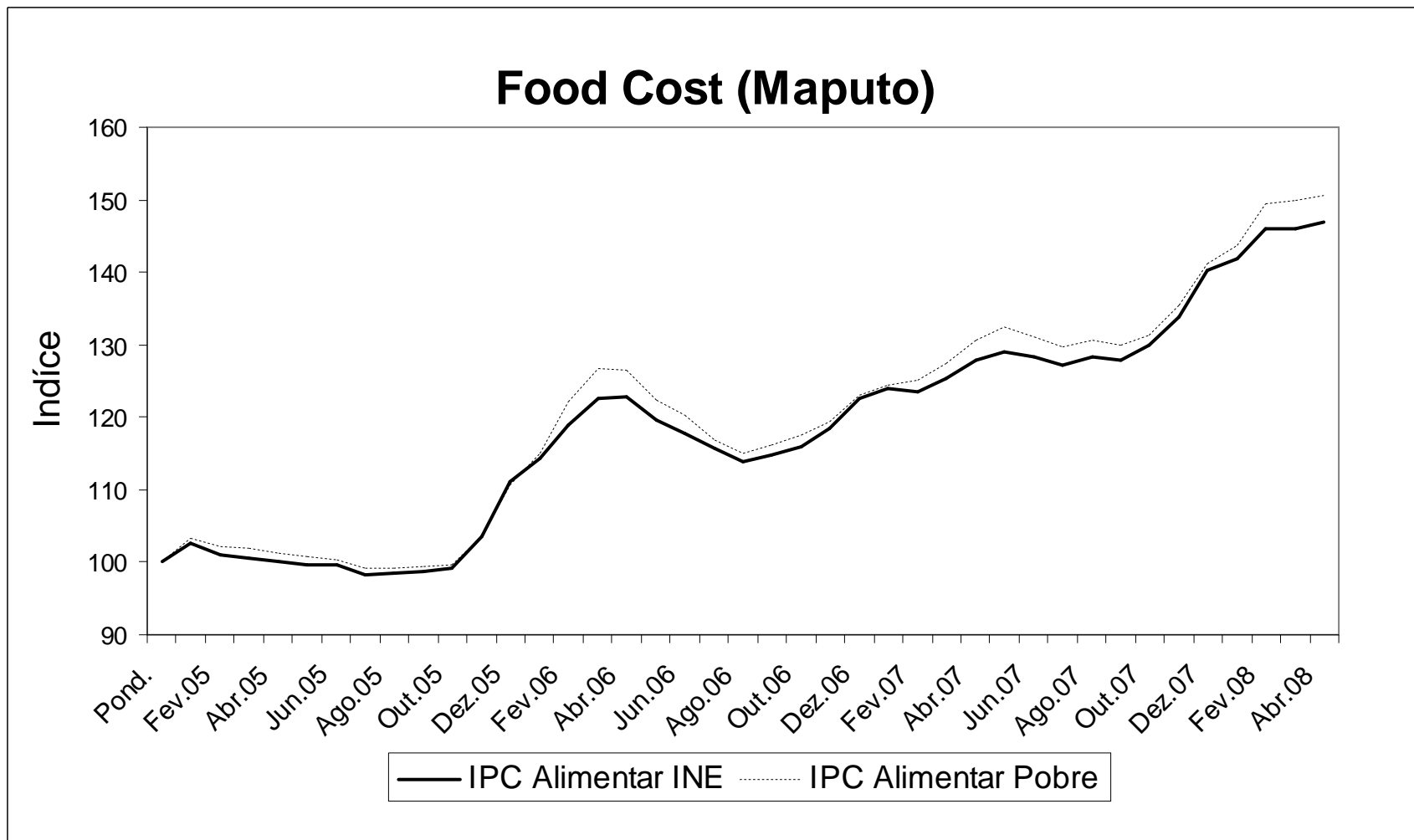
General Consumer Price Index for Maputo

All Population vs Poor

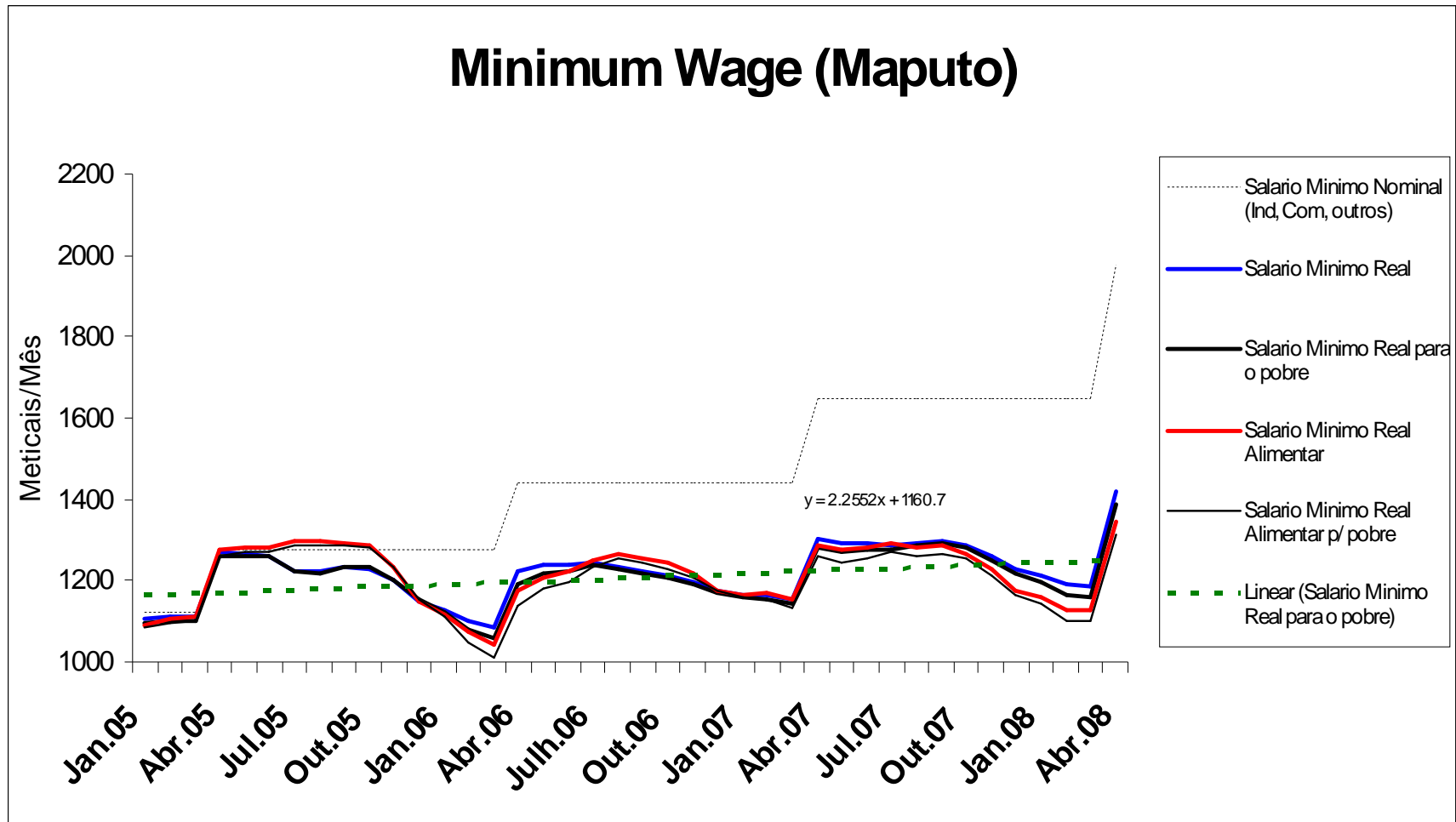


Food Consumer Price Index in Maputo

All Population vs Poor

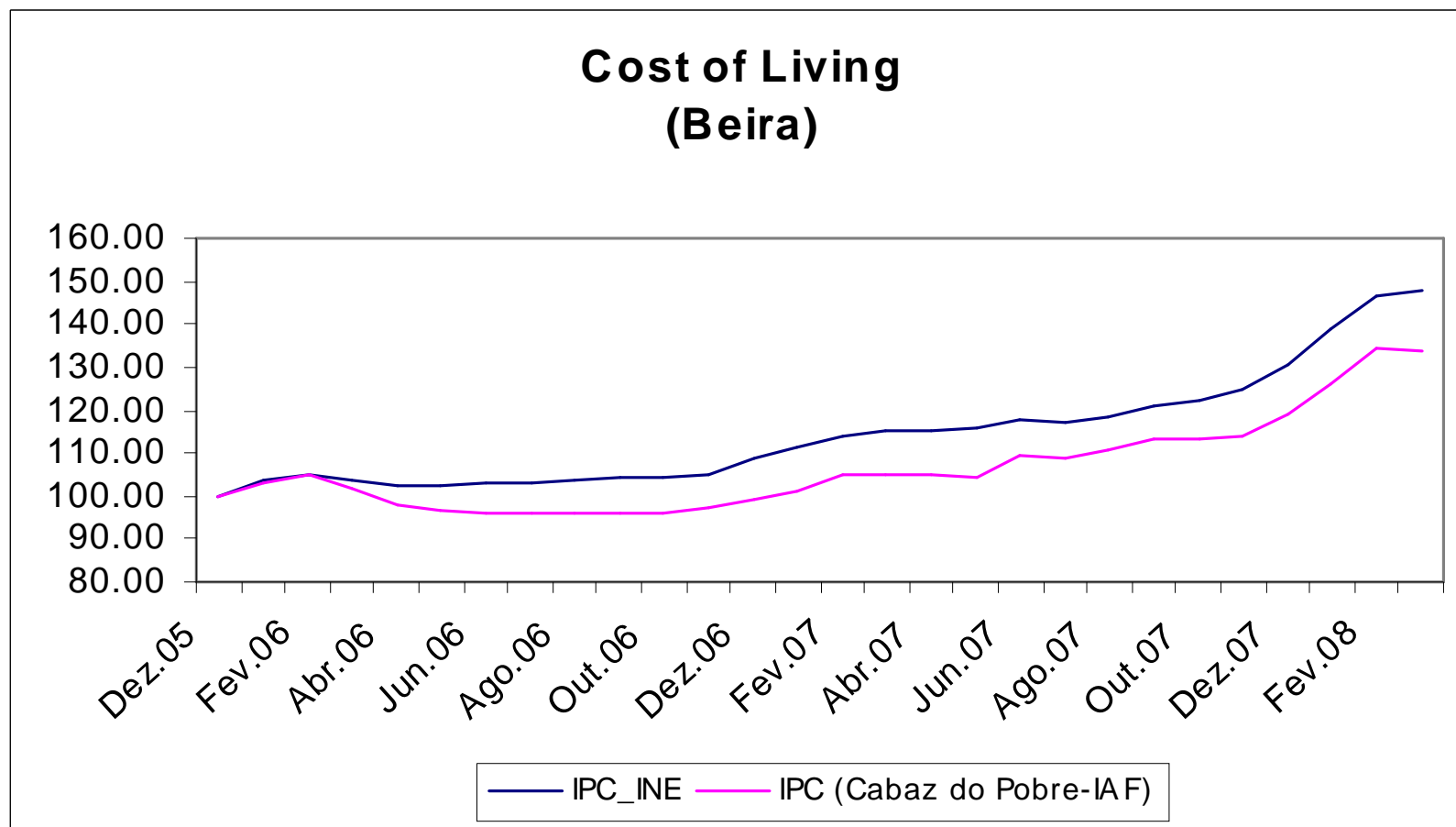


Trends in the Minimum Wage

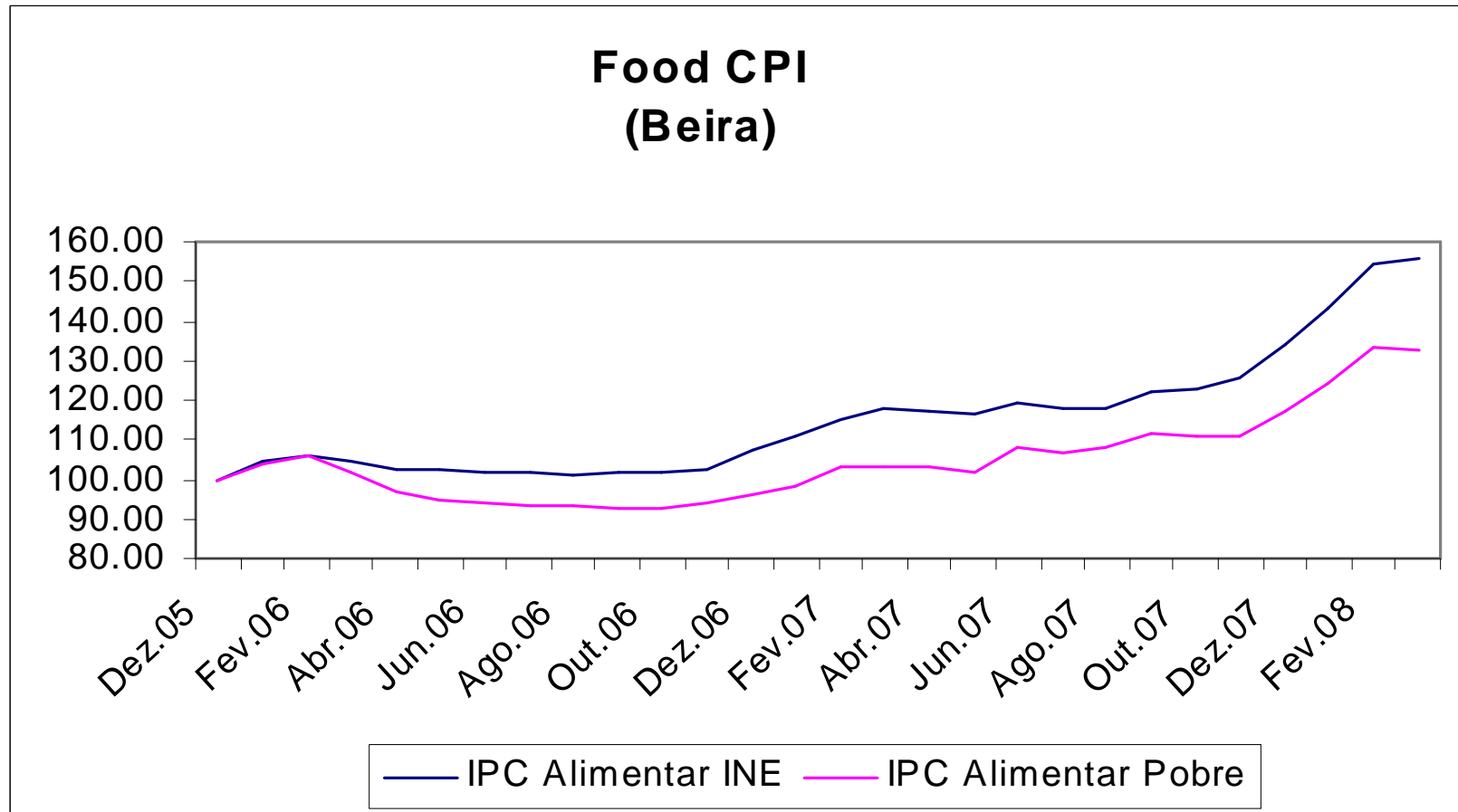


General Consumer Price Index for Beira

All Population vs Poor



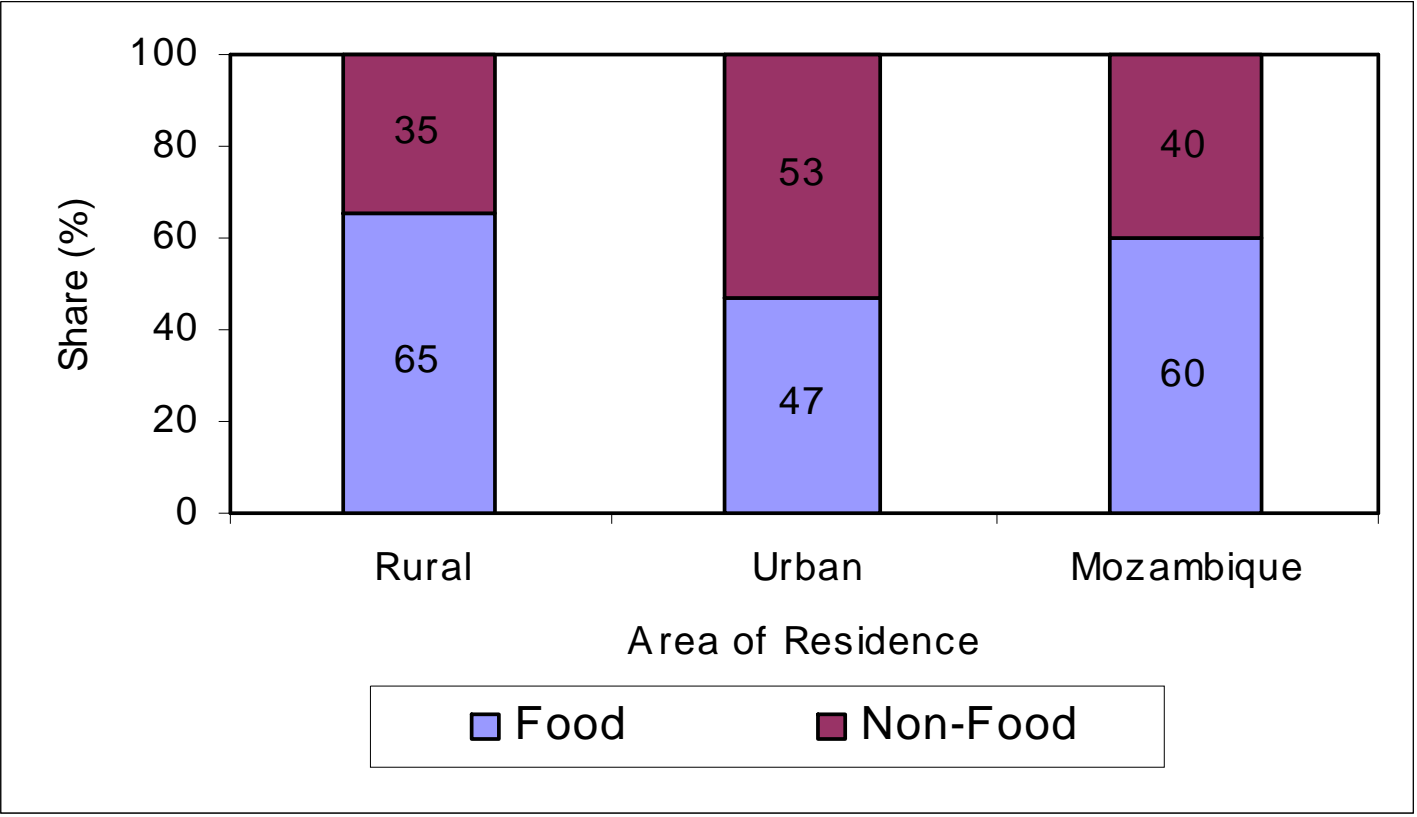
Food Consumer Price Index in Beira All Population vs Poor



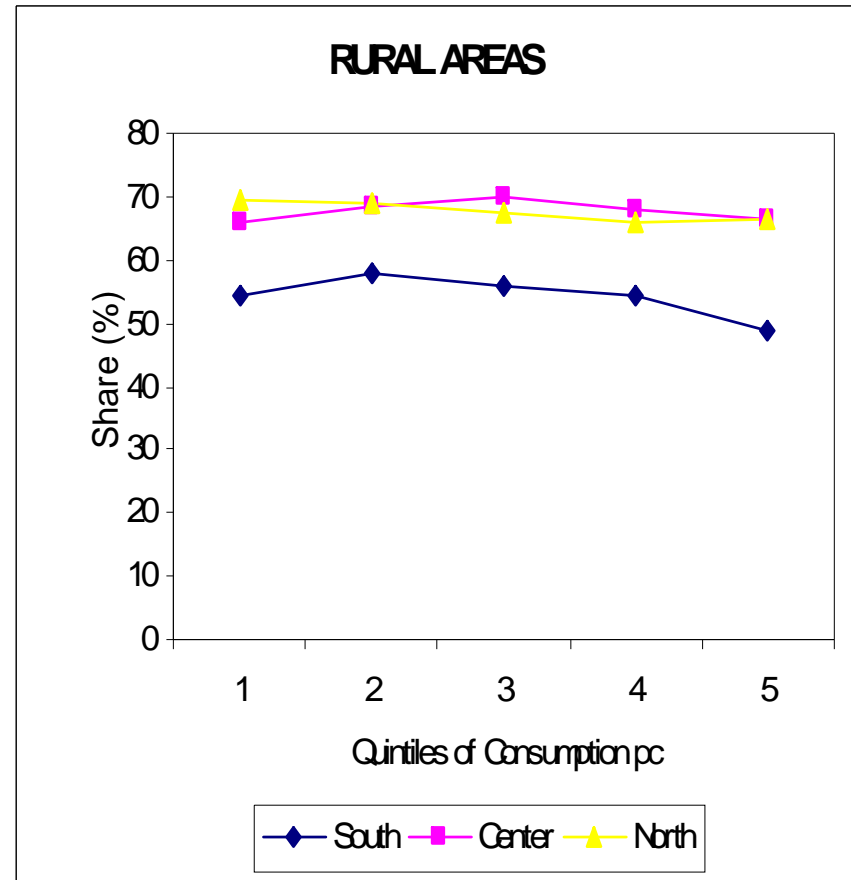
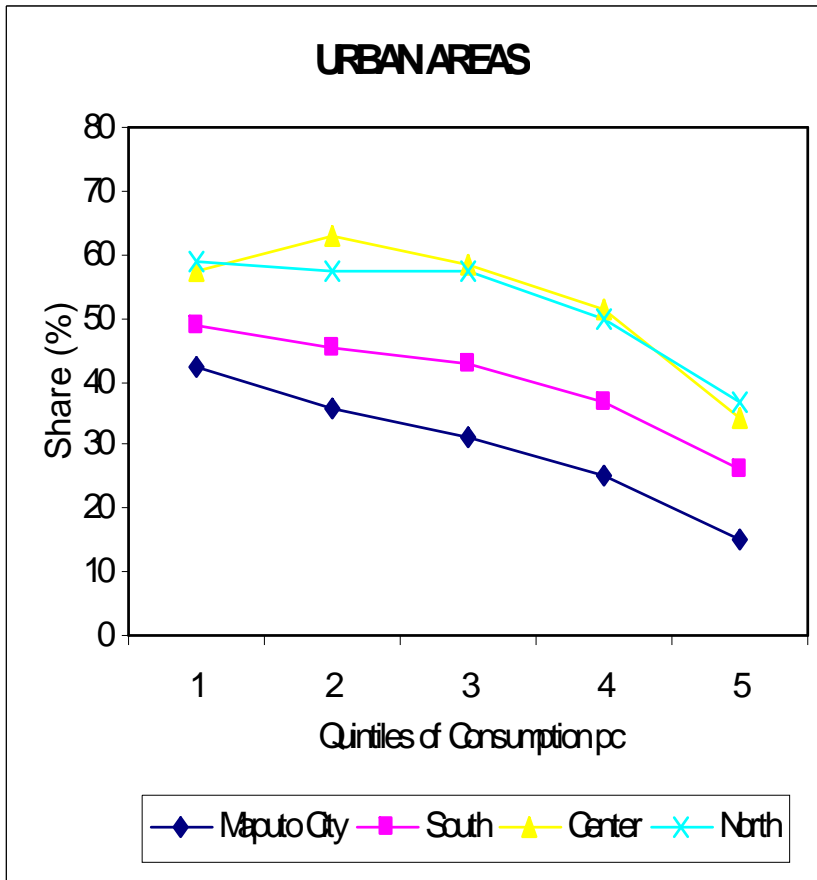
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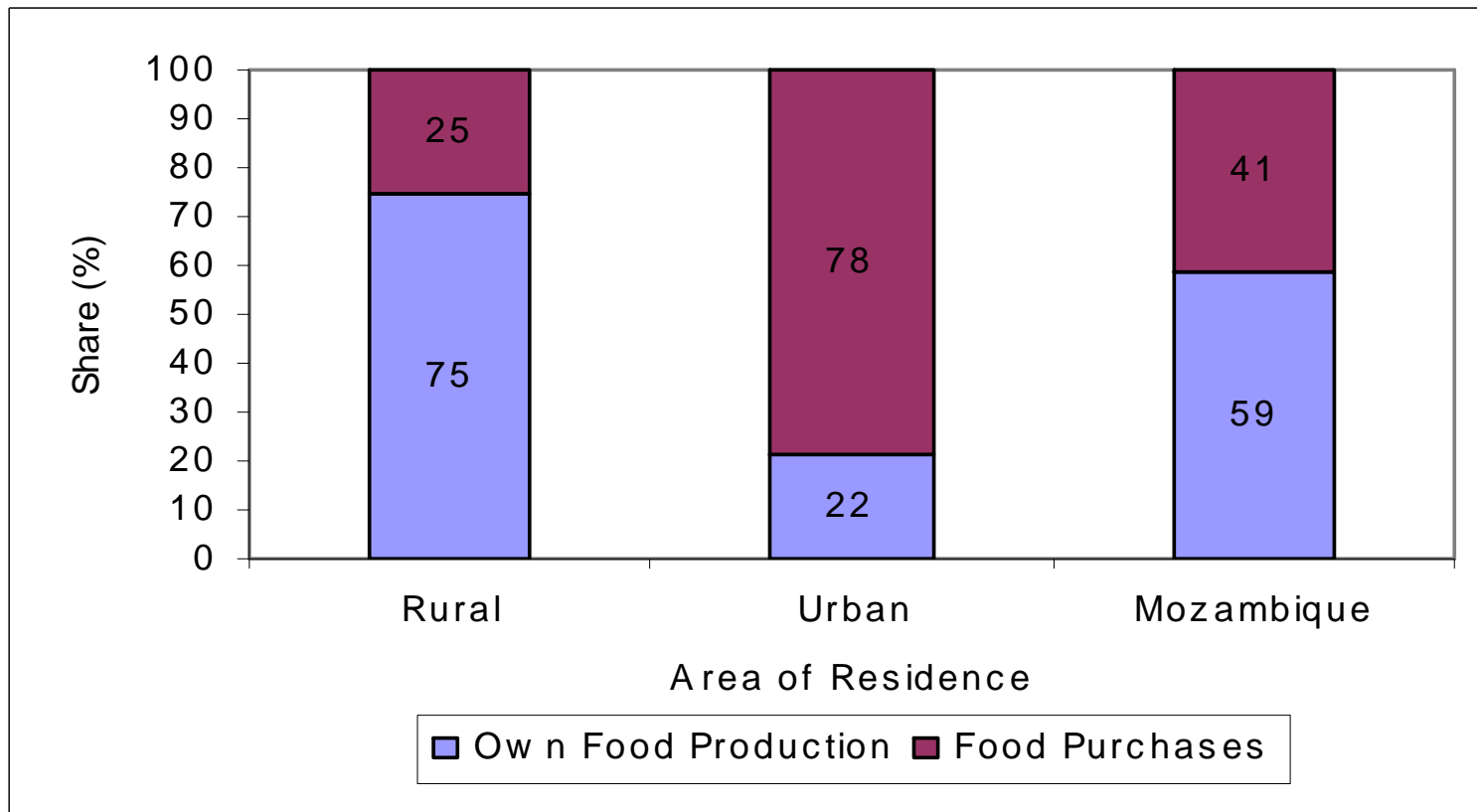
Share of Food in Total Household Consumption by Area of Residence



Share of Food in Total Household Consumption by Area of Residence, Region and Wealth

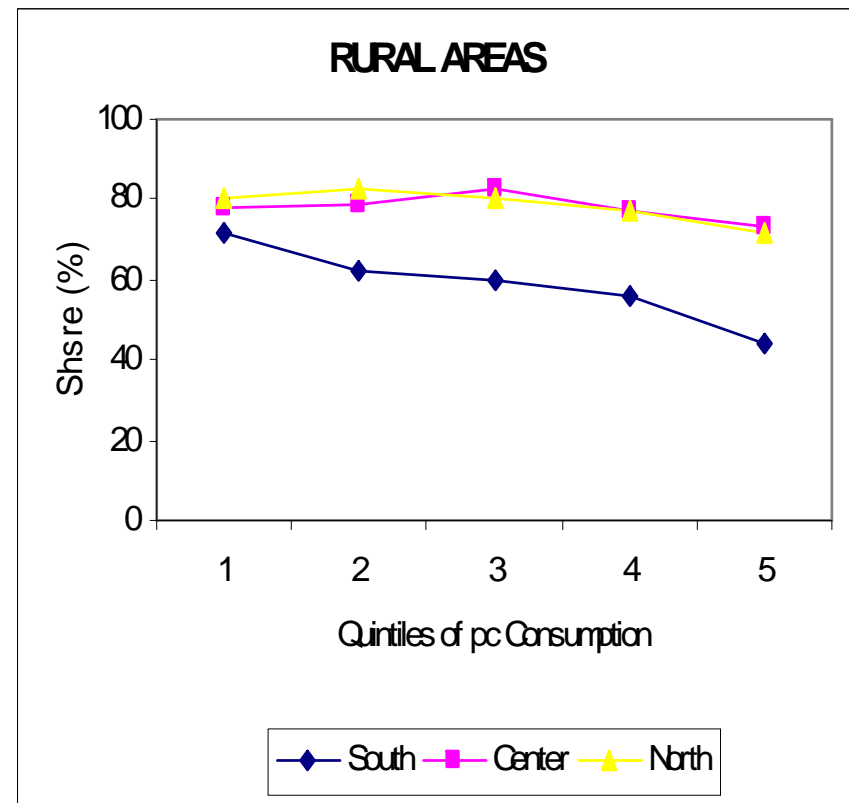
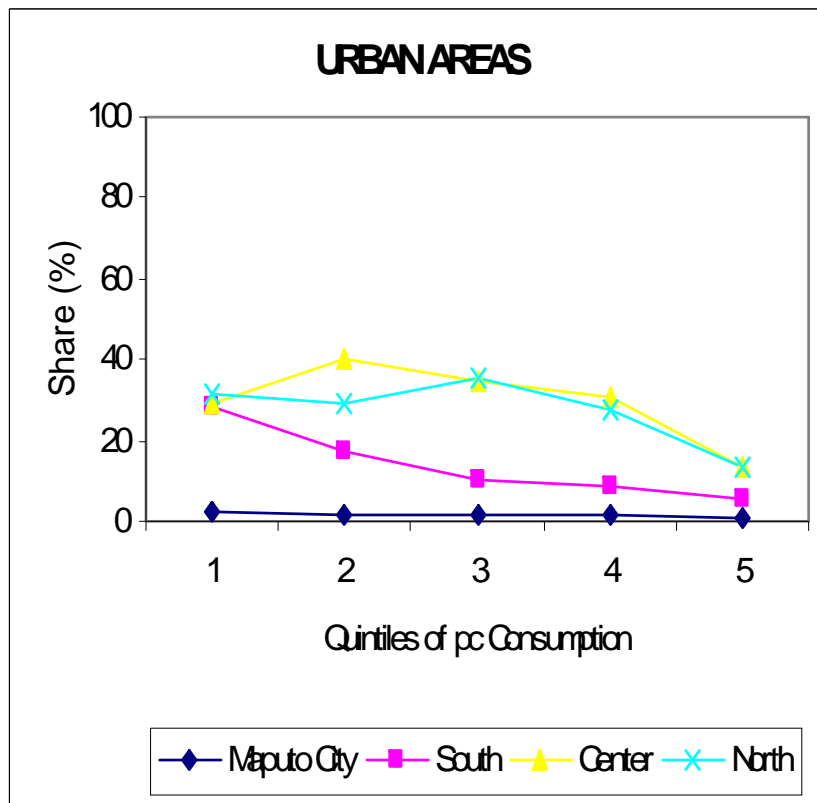


Share of Own Food Production in Food Consumption by Area of Residence

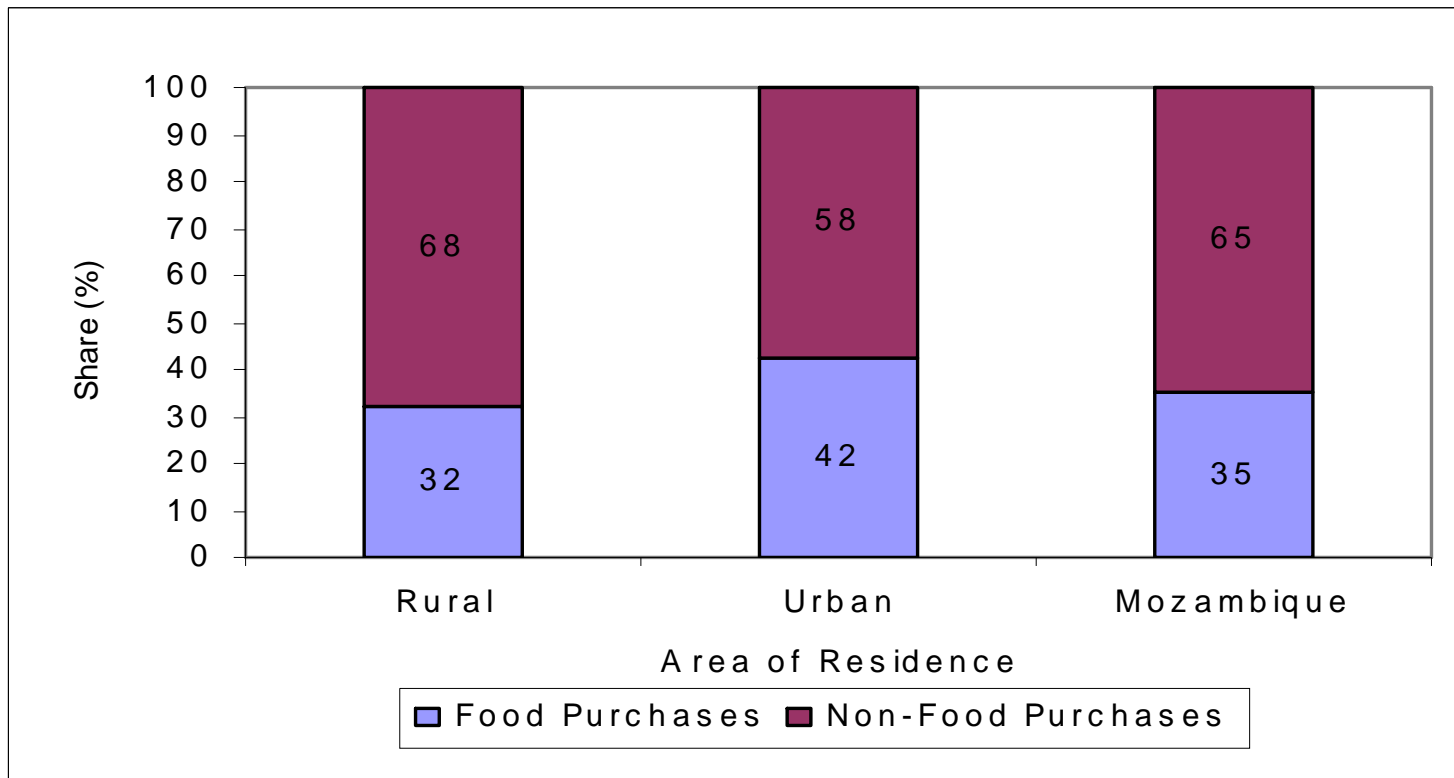


Share of Own Food Production in Food Consumption

Area of Residence, Region and Wealth

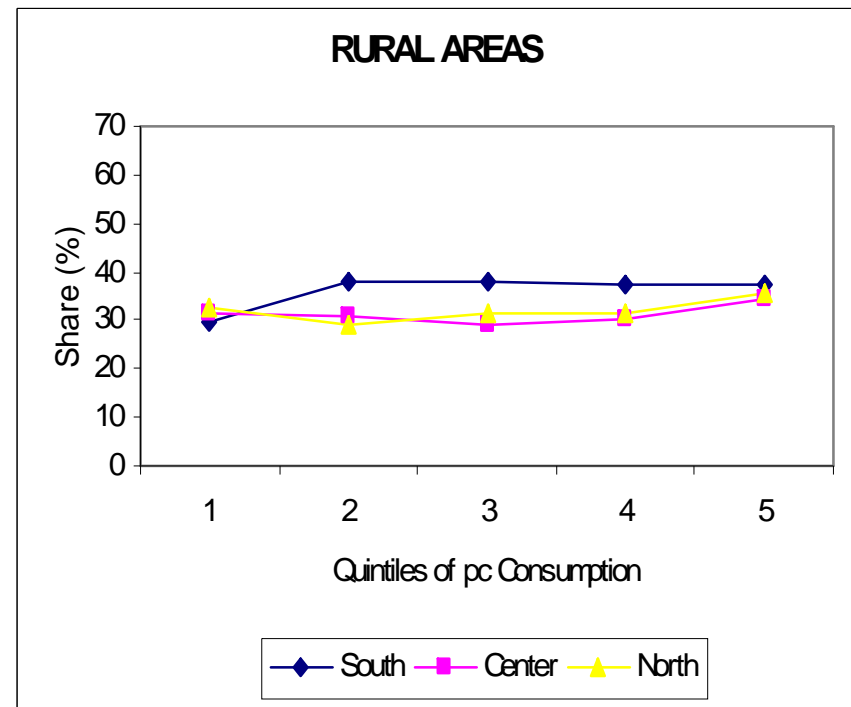
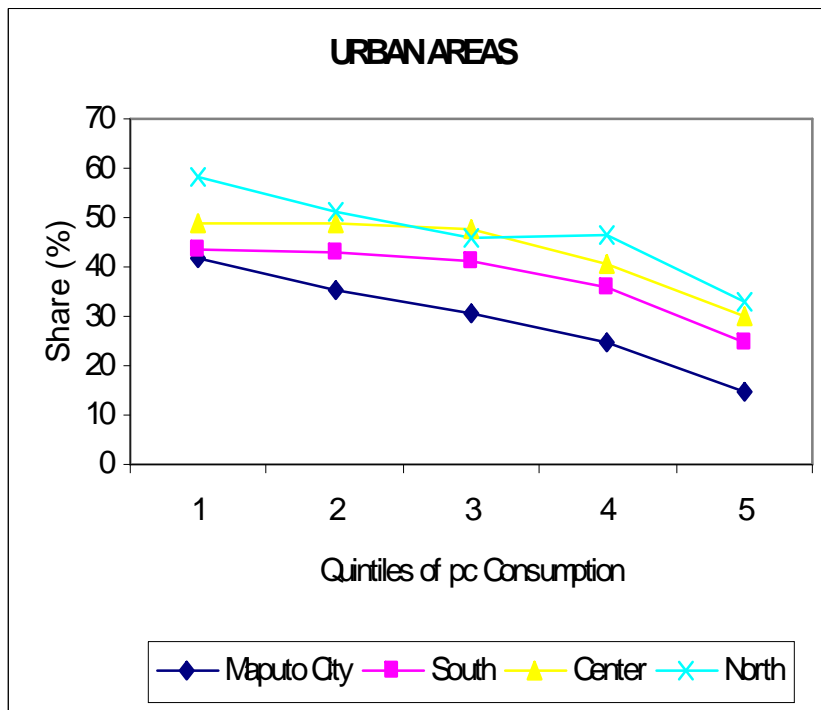


Share of Food in Total Cash Expenditure by Area of Residence



Share of Food in Total Cash Expenditures

Area of Residence, Region and Wealth



Effects of Food Price Changes on Welfare

The Net Benefit Ratio Approach

NBR - Net Benefit Ratio (Deaton, 1989)

Proxies for a measure of the short run impact of food price changes on household welfare, e.g., elasticity of real income with respect to food price changes.

$$\text{NBR} = \text{BR} - \text{CR}$$

Where,

$\text{BR} = Y_{\text{Food}} / Y_{\text{total}}$: Ratio of food sales to total household monetary income

$\text{CR} = C_{\text{Food}} / C_{\text{total}}$: Ratio of food expenditure to total household expenditure

ΔW (Change in Welfare):

$$\Delta W = \Delta P_{\text{Food}} * \text{NBR}$$

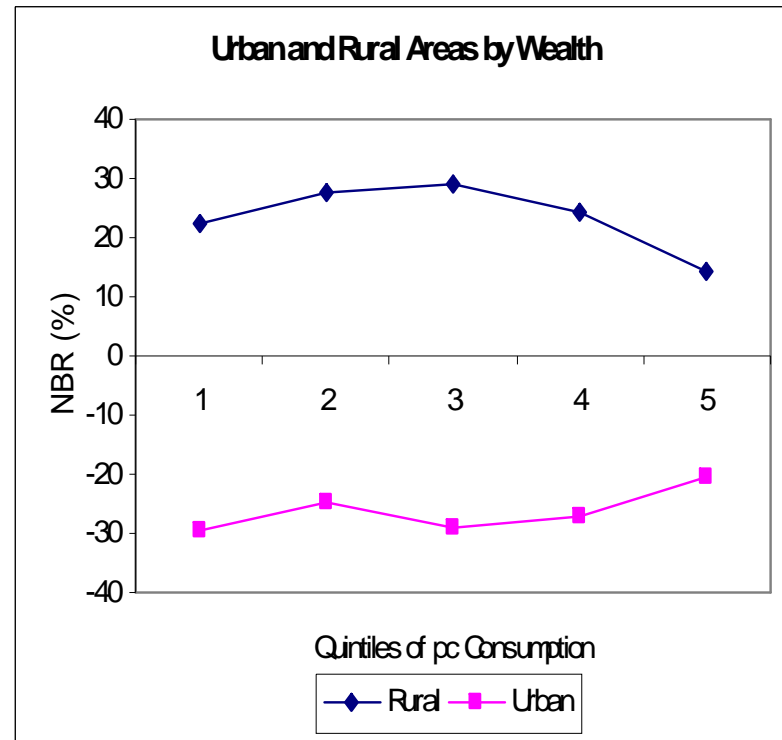
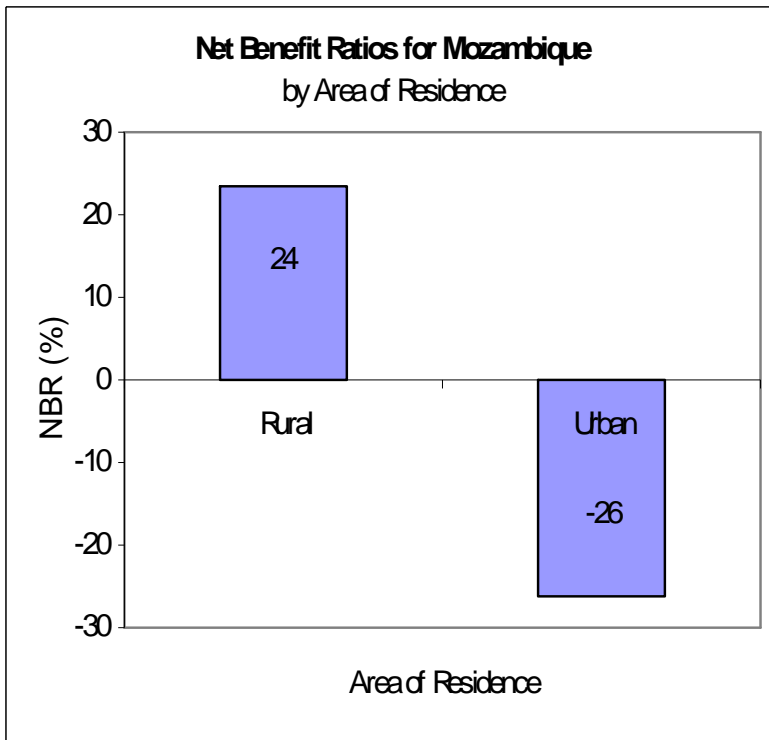
Where,

ΔP_{Food} : Change in food prices

NBR : Net Benefit ratio

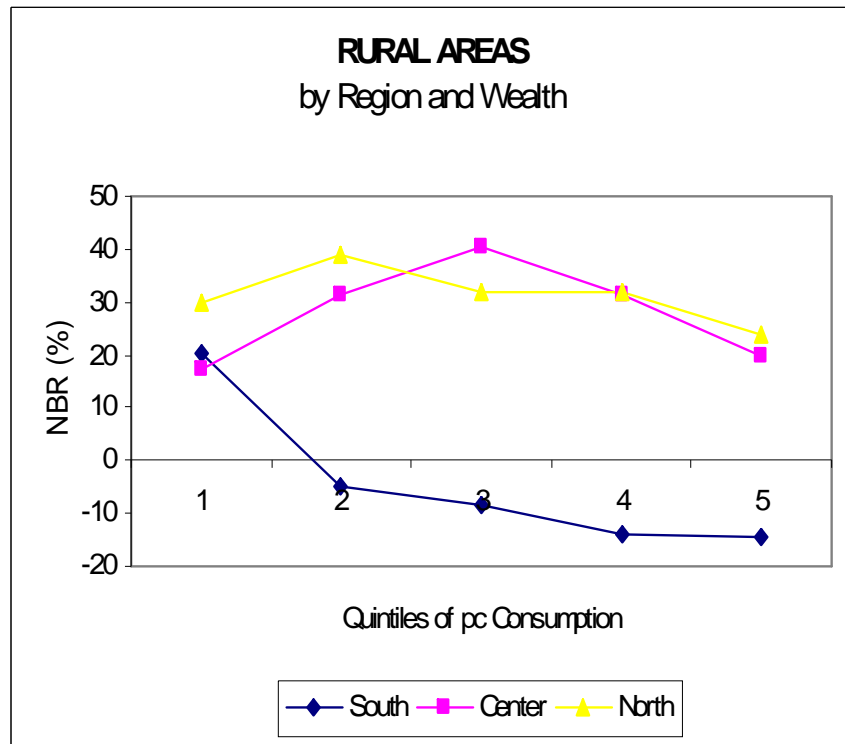
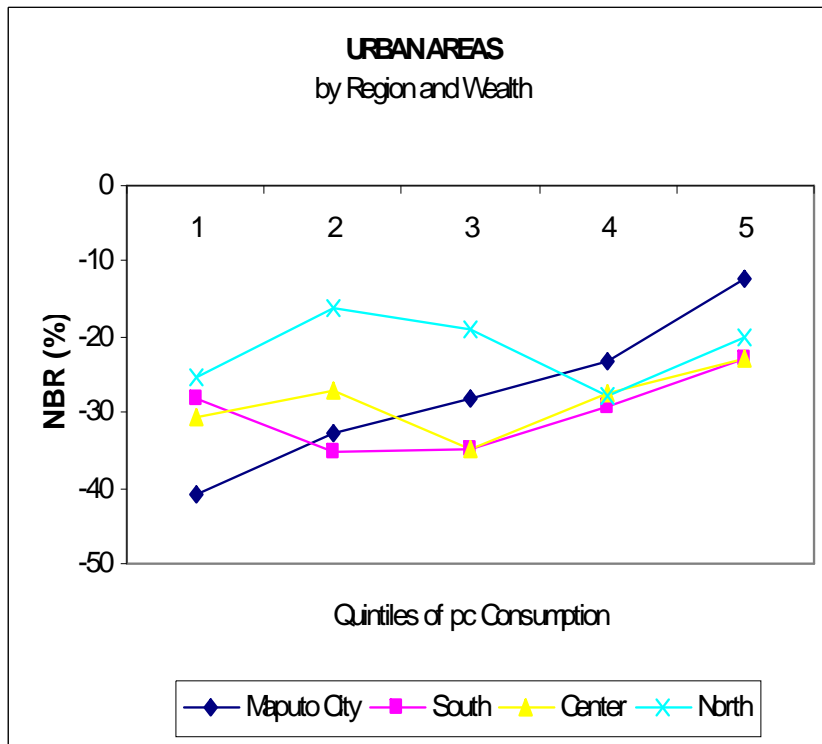
Source for Mozambique: IAF 2002/3 data on household income and expenditure

Net Benefit Ratios for Mozambique by Area of Residence and Wealth



Net Benefit Ratios for Mozambique

Area of Residence, Region and Wealth



Main messages

- Food very important in household consumption and expenditures especially in rural areas
- Home production particularly important, especially in rural areas
 - Rural, poor, and north/center rely a lot on home production
 - Insulated from external price shocks
- Negative net impact in urban areas and the south rural areas (in the short run)
 - Rural areas on average are net beneficiaries and urban are losers
 - Maputo/southern urban poor particularly hit
- Food price shocks are also an opportunity
 - Better links to markets can increase benefits from price hikes
 - Need to account for Long Run Effects (wage adjustments)

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Economy Wide Model

- Firms and households respond to price signals.
- Considers macroeconomic choices:
 - Fixed versus flexible exchange rates
 - Level of government recurrent and investment spending
- Respect macroeconomic constraints:
 - Demand less than or equal to supply
 - Government and household budget constraints respected.
 - Balance of payments

Import Structure

	Value	Share of Imports	Share of GDP
Value of Imports	74,082,048	100.0	43.0
Agriculture and Food	8,768,946	11.8	5.1
Staple Grains and Derived Products	3,827,010	5.2	2.2
Petroleum Products and Petro Chemicals	13,420,041	18.1	7.8
Petroleum Products	9,027,888	12.2	5.2

Source: National Accounts 2006

Balance of Payments

$$\text{General: } B + P_E E - (P_N M_N + P_O O) = \Delta R$$

where:

B = Capital flows

P = World prices

E = Exports

M_N = Non-oil imports

O = Oil imports

ΔR = Variation in international reserves
of Central Bank

Impact of higher prices

$$B + P_E E - (P_m M_N + P_o O) = \Delta R$$

- How to pay for the oil?
 - Reduce oil imports
 - Reduce other imports
 - Expand exports
 - Borrow money from abroad
 - Decrease international reserves
- Real world: a combination of the five possibilities
- Model: only exports and imports adjust

Macroeconomic Impacts

(percentage changes)

		Oil	Food	Combined
Quantity	Absorption (C+I+G)	-3.6	-1.8	-5.1
	Consumption	-5.8	-1.8	-7.3
	Investment	1.5	-2.8	-1.2
	Recurrent Govt.			
	Exports	5.6	1.0	5.9
	Imports	-6.4	-3.7	-9.6
Prices	Nominal exchange rate	4.5	-5.6	-1.5
	Real exchange rate	15.4	0.6	15.2
	Terms-of-trade	-12.9	-4.8	-16.2

Subsidies and Macro

(percentage changes)

		Combined	Subsidies
Quantity	Absorption (C+I+G)	-5.15	-5.28
	Consumption	-7.27	-5.31
	Investment	-1.24	-8.17
	Recurrent Govt.		
	Exports	5.87	7.62
	Imports	-9.57	-9.50
Prices	Nominal exchange rate	-1.52	0.52
	Real exchange rate	15.23	17.38
	Terms-of-trade	-16.21	-16.21

Household Welfare

(percentage changes)

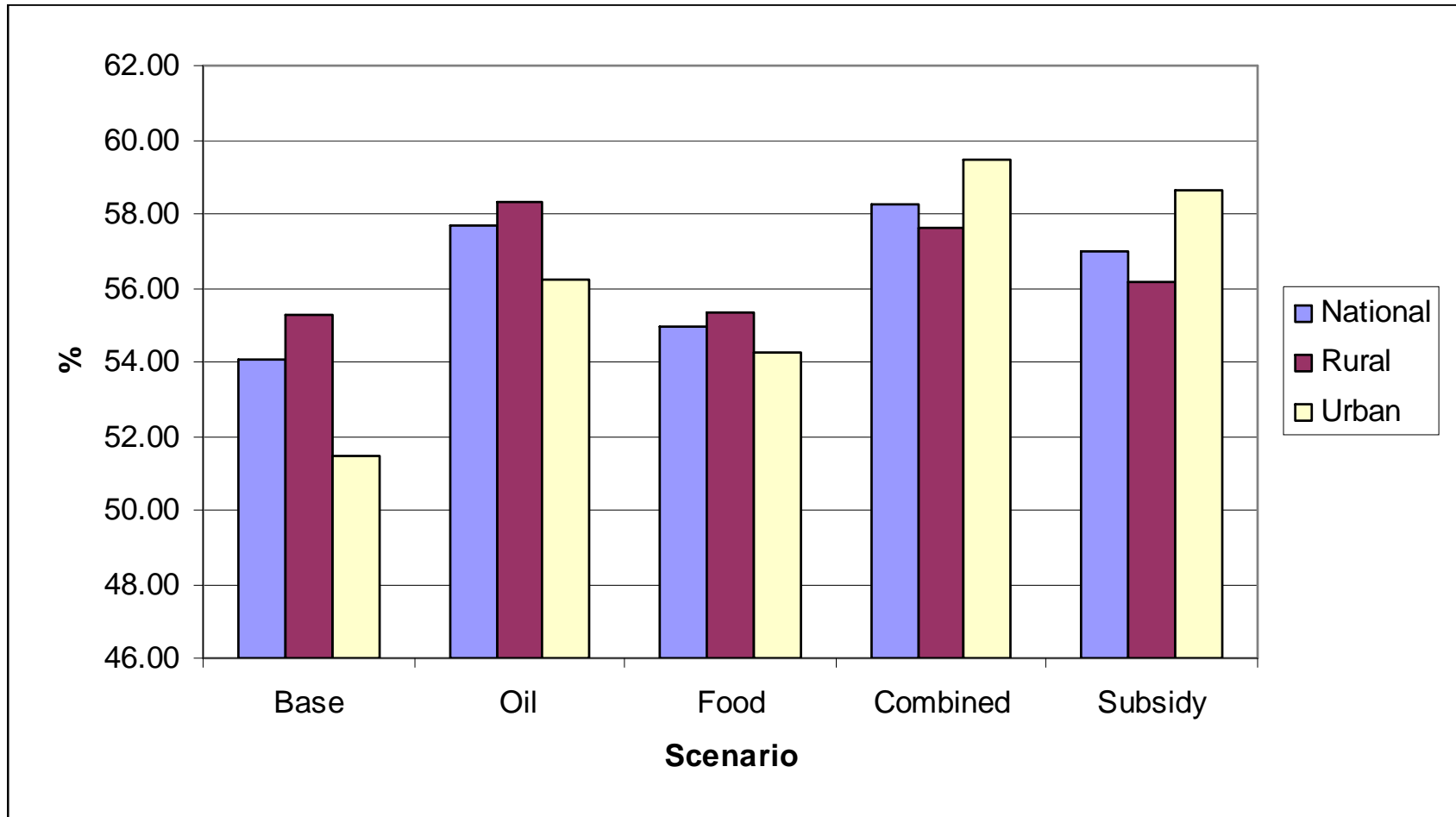
		Oil	Food	Combined
Rural	Quintile 1	-3.13	0.66	-1.89
	Quintile 2	-3.64	0.07	-2.99
	Quintile 3	-3.77	-0.11	-3.34
	Quintile 4	-4.26	-0.18	-3.86
	Quintile 5	-5.14	0.05	-4.49
Urban	Quintile 1	-5.46	-5.91	-11.16
	Quintile 2	-6.21	-5.85	-11.68
	Quintile 3	-5.98	-5.34	-11.02
	Quintile 4	-7.14	-4.50	-11.19
	Quintile 5	-7.15	-2.66	-9.45
National		-5.89	-1.99	-7.44

Subsidies and Households

(percentage changes)

		Combined	Subsidy
Rural	Quintile 1	-1.89	0.36
	Quintile 2	-2.99	-0.55
	Quintile 3	-3.34	-0.99
	Quintile 4	-3.86	-1.27
	Quintile 5	-4.49	-1.98
Urban	Quintile 1	-11.16	-9.89
	Quintile 2	-11.68	-9.93
	Quintile 3	-11.02	-9.47
	Quintile 4	-11.19	-9.20
	Quintile 5	-9.45	-7.67
National		-7.44	-5.40

Poverty Headcount



Main messages

- Recent world price increases, particularly petroleum price increases, have negative implications for the Mozambican economy.
- Poverty impacts are considerable.
- Urban areas and the South are more strongly affected.
- Policy measures can mitigate impacts on households but at a cost.